

REMARKS

The examiner has rejected claims 56, 57, 59-67 and 69-75 under 35 USC 102 over McCloskey. Applicant has amended claims 56 and 66 to incorporate the features of the previous claims 65 and 75 in a manner that takes account of the examiner's objections to claims 65 and 75. Applicant believes that the examiner's objections to claims 65 and 75 do not apply to the amended claims 56 and 66.

Moreover, the wording of claim 56 and claim 66 has been modified to reflect, more clearly, the content of the original disclosure. In particular, the described embodiment maintains a count (illustrated in FIG. 8) and responds as the count passes various values which indicate corresponding positions (see primarily pages 15 and 16). However, counts and positions do not necessarily correspond exactly, for example through slippage as described on page 11, lines 18 to 25. The significance of counts, particularly as illustrated in FIG. 8 and the corresponding description, has therefore been reflected by appropriate modification of claims 56, 66 and dependent claims.

Claims 56 and 66 have been amended to specify that the reversing count is between the fully closed count and the nearest speed change count (i.e. the speed change count nearest to the fully closed count, if more than one speed change count exists). The reversing count and the approximately corresponding position are thus separated from the nearest speed change count and approximately corresponding position, as illustrated in FIG. 8. This allows each count to be chosen separately.

McCloskey does not describe an arrangement having a reversing count which is distinct from the speed change count. McCloskey describes an arrangement in which a single count is used to make two simultaneous changes in the response of a door, namely to change speed and also to change between reopening if obstructed, or stopping if obstructed. These two changes are made in response to the same condition ("signal A has reached the count of signal B") as described in column 4, lines 23 to 25.

Thus, the door of McCloskey, when closing, will either be travelling quickly and controlled to reopen if obstructed, or will be travelling slowly and controlled to stop if obstructed. Only those two states exist. This prevents the separate requirements of mechanical reliability and safety being addressed independently, as mentioned at page 17, line 12 of the present application.

For example, imagine the door of the McCloskey device encountering the head or torso of a small child, between the edge of the door and the frame against which it is closing. This might typically be encountered when the door is perhaps 15 cm or 30 cm away from being fully closed. Unless the McCloskey system remained able to reopen within this range, the child's head would be gripped and trapped, once encountered. However, if the McCloskey door is not to grip the child's head, it must be encountered before the low speed region, because the door will stop if obstructed in the low speed region. Thus, the impact with the child's head will be at full speed of the door. In short, the two possible states of the McCloskey system ensure that a child's head is either encountered at full speed, or is trapped after being encountered.

Embodiments of the claimed subject matter provide improvements in mechanical reliability and safety, by providing a reversing count which is different from the speed change count and is between the fully closed count and the nearest speed change count. Accordingly, embodiments of the claimed subject matter are able to have three modes of operation while closing, as can be understood from FIG. 8 and its accompanying description. Initially, the closure member can be closing at full speed but sufficiently far away from the fully closed position to have no danger of trapping a body part. When the speed change count is reached, the count is indicating that the closure member is entering the "danger zone" in which a detected obstruction might be a body part, such as a child's head. Accordingly, the speed is changed, for example to slow the closure member so that any impact against a child's head will be less serious than if the closure member were moving at full speed. However, within the danger zone between the speed change

count and the reversing count, the arrangement remains operable to reopen in the event that an obstruction is encountered. Thus, not only will a child's head be encountered more gently than in the McCloskey arrangement, but the head will also be released by the closure member reopening. The McCloskey arrangement cannot encounter a head gently and release it.

In relation to mechanical reliability, the embodiments of the claimed subject matter take advantage of the realisation that the zone of danger to a body part does not extend until the closure member is fully closed. A count is eventually reached which approximately indicates a position (perhaps a few centimeters from being fully closed) after which a body part cannot be encountered anew - it would already have been encountered (see page 17, line 3). After that count is reached, a new obstruction may be the result of mechanical misalignment etc. and thus does not require the door to be reopened. Thus, embodiments of the claimed subject matter exhibit a third mode of operation once past the reversing count and beyond the danger zone. In the third mode, the closure member stops when obstructed (e.g. when encountering the effective ground level, which may have moved by subsidence, snow build-up, mechanical misalignment etc.), but nevertheless encounters the obstruction at slow speed, thus reducing the risk of damage to the apparatus.

McCloskey does not describe "a reversing count which is between the fully closed count and said nearest speed change count". Accordingly, the subject matter of claims 56 and 66 is not disclosed by McCloskey. There is nothing in McCloskey which teaches or suggests the possibility of separating the functions of the reversing count and the speed change count, or that the result would provide improved safety, as explained above, and also provide improved mechanical reliability, as also noted above.

In view of the foregoing, applicant submits that the subject matter of claims 56 and 66 is not disclosed or suggested by

McCloskey. Therefore, claims 56 and 66 are patentable and it follows that the dependent claims also are patentable.

Respectfully submitted,

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Docket: SWIN 3311